**Research Notes**

Program Steering Committee (PSC): GS

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Title: Compliance Crash Testing of the Caltrans Type 26 Bridge Rail (732SW)
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**TITLE:**
Compliance Crash Testing of the Caltrans Type 26 Bridge Rail.

A taller version of the Type 26 bridge rail is being crash tested to make sure it meets new crash testing guidelines.

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**WHAT IS THE NEED?**

The Type 26 bridge rail is an existing design that has been built on numerous bridges throughout California, providing adequate service (current Std. Plan B11-54). The Type 26 concrete barrier is the oldest pedestrian barrier rail widely used in California. It is typically used in lower speed roads (includes a sidewalk) and is the cheapest barrier rail that can be constructed. It has never been crash tested, however.

New crash testing guidelines, the Manual for Assessing Safety Hardware or MASH, have recently been released. A taller version of the Type 26 (called the 732SW) will be crash-tested according to the newer, stricter crash test guidelines.

**WHAT ARE WE DOING?**

First, we obtained a plan sheet of the modified Type 26 bridge rail, called the 732SW, from the Caltrans Structures Barrier Specialist. Next we assembled a construction contract package to build a representative test section of the bridge rail at the Caltrans Dynamic Test Facility in West Sacramento and sent it to DPAC. We acted as the construction contract manager to build the bridge rail. Then we conducted the testing, including full-scale crash tests to determine if it is crashworthy. The data analysis will be completed and a final report assembled.

**WHAT IS OUR GOAL?**

The objective of this research project is to determine if the Type 732SW bridge rail with sidewalk, constructed with a tubular steel hand railing will meet the evaluation criteria of MASH 09 Test Level 2 for longitudinal barriers. Test Level 2 consists of two crash tests: an 1100-kg car at 70 km/h and a 25˚-impact angle and a 2270-kg pickup truck at 70 km/h and a 25˚-impact angle. To ensure the barrier is strong enough withstand higher speed impacts, the pickup test was conducted at TL-3 (100 km/h and a 25˚-impact angle.) The goal of the project is to verify the crashworthiness of the barrier for use on California highways and local roads.

**WHAT IS THE BENEFIT?**

The benefit of this research is a standard plan for a MASH-compliant version of a barrier that has been the workhorse pedestrian barrier for Caltrans for many years. By meeting the federal safety guidelines, Caltrans will have reduced tort liability and will have federal fund reimbursement eligibility.

**WHAT IS THE PROGRESS TO DATE?**

All of the testing has been conducted and most of the data has been analyzed. The project report is in progress and should be completed by the end of 2014.

**IMAGES**

Type 732SW Overview

Pickup Test Impact